



Communicator

May 2013

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News You Can Lose
and Much More!





The Communicator



**SURREY
AMATEUR RADIO CLUB**

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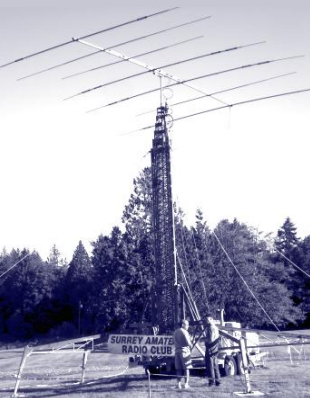
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VIA THE WEB
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The SARC Communicator is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news and other information.



April Monthly Meeting Minutes

April 10, 2013

Introduction

The meeting was brought to order at 1900 hr by President John Brodie VA7XB. A welcome was extended to Len, a WW2 CW operator, introduced by Bill Little VA7ZBL. Kapila VE7KGK then introduced Howard Ticzon VA7HTZ/DU1IWT from the Philippines. Howard recently achieved his basic-with-honours status at the same time as Kapila's son Lahiru VA7KSC.

Treasurers Report

Scott VE7HA reported a healthy bank balance and stated that recent expenditures include \$163 for payment to Langley ARA for 50% of the cost of printing raffle tickets and \$250 reimbursement to VA7XB for purchase of two power filters. It was noted that the filters are required for use with the Honda generators which generate RF hash on 80m; the filters will be fully evaluated when other FD equipment is run out for testing next

month. In reply to a member's question, it was noted that Al Neufeld VE7CDC and Rick Law VE7GMO have generously donated trailer hitch accessories so that no purchase of these items has been required.

Raffle & Cruise-in

During the evening, books of raffle tickets were handed out to members for sale over the next five months, with the draw to take place at the Langley Good Times Cruise-in on Sept. 7th. Later in the meeting Al Munnik VA7MP stated that he and Don Dangelmaier VA7AB had secured agreement for LARA/SARC/SEPAR team to have 4 tables strategically situated to sell raffle tickets and promote amateur radio at the Cruise-in. This year, the tables are also to serve as "information centres" and in case of emergency members equipped with handheld radios will communicate with net control located in the police station.

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President's Report

	SEPARS Net	SARC Net
1 st Tuesday	Drew VA7DRW Jay VE7OFH Standby	Drew VA7DRW
2 nd Tuesday	Dixie VA7DIX Alan VA7BIT Standby	Jinty VA7JMR
3 rd Tuesday	Rob VE7CZV	Anton VE7SSD
4 th Tuesday	Peter VE7PGX Dixie VA7DIX Standby	John VA7XB
5 th Tuesday	Jinty VA7JMR	Bill VE7XS
Want a turn at Net Control? Contact the SARC Net Manager ve7ti @ separs.net		

CLUB EXECUTIVE 2013-2013

PRESIDENT

John Brodie VA7XB

VICE PRESIDENT

Brett Garrett VE7GM

SECRETARY

Vacant

TREASURER

Scott Hawrelak VE7HA

DIRECTORS

Kelvin Hall VA7KPH
(SEPARS)

John Schouten VE7TI
(Communicator Editor
& Net Manager)

George Merchant
VE7QH (Repeaters)

Bill Little VA7ZBL
(Membership)

Bill Gipps VE7XS

Rob Gilchrist VE7CZV

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1980 and Echolink node 496228. On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9

Social get-together

John VA7XB explained that the Executive had second thoughts about the additional time commitment required for a separate "social" night and, instead, proposed that we meet informally after each scheduled club meeting at McDonalds or other nearby restaurant. After considering various locations, the group elected to meet at McDonalds restaurant at 15574 Fraser Highway immediately after the meeting on a trial basis.

Repeater

Discussion about repeater noise experienced during the most recent Tuesday night net suggests that should the noise persist, SARC's repeater team needs to further investigate and remedy. Also planned soon are a site visit to observe any changes to the ventilation implemented by the building owners and discussion with Surrey Fire Services in followup to repeater issues raised in February. A repeater site visit for club members is also planned during May.

Proposed Constitution & Bylaw Changes

John VA7XB stated that recommendations for changes to the Constitution and Bylaws by John VE7TI and George VE7QH are in progress. These include a name change to "Surrey Amateur Radio Association", and a revised procedure for electing officers. More information will be rolled out well before the AGM in June.

Foxhunt

The Foxhunt is scheduled for May 18th at Crescent Park in South Surrey, as fully described in the March and April *Communicator* and on the website. Those wishing to construct a loop antenna or offset attenuator were requested to make it known to John VA7XB, who will be assembling components and organizing a workshop. Cost of the loop antenna is expected to be under \$10 and the attenuator under \$25, depending on the number ordered.

Field Day

Brett VE7GM reported that the FD planning committee is meeting regularly to work out details in preparation for FD which will be on June 21/22. An equipment setup/test

day is planned for May (date not yet finalized). We now have a volunteer for Site Safety Officer, Jenny Martin VE7SUF. Thanks to Bill Little for signing her up for the task. We are still looking for a spare CW operator and First Aid volunteers.

Operator Training

Brett VE7GM reported that two contests were done in March: the BARTG RTTY contest and CQ WPX SSB contest. Both gave participants an opportunity to get into running mode, although propagation was disappointing so the activity level was quite a bit lower than hoped. Other than the YL Day May 18/19, the last training event of the year is behind us. YL Day is a multi-mode event that encourages on the air activity around the world, not only from YLs but both sexes and all ages. Details for YL Day are still being worked out.

May Meeting

The agenda for the May meeting has not been finalized but is expected to have a Field Day theme.

Other Business

Heinz Buhrig VA7AQ announced that he will be QRV at Gambier Island IOTA NA91 on April 25th using the callsign VA7AQ/7. Look for Heinz on all HF bands, SSB only.

Presentation

After a coffee break, Bill Gipps VE7XS was introduced as a long-time member and Director of SARC and RAC Regional Director for BC & Yukon. Bill gave an entertaining account of his DXpedition last year to the Kingdom of Lesotho in Africa along with two other local hams, Neil King VA7DX and Keith Whitney VA7KW who were part of a multi-national team operating as 7P8D. Bill described the challenges of the project in a country with limited resources and comforts but spoke of the satisfaction derived from experiencing other cultures and seeing the innovative ways they cope (apparently happily) with having very little. Just getting to Lesotho and back made for an interesting story. Many thanks to Bill for taking time out from his busy schedule to prepare and present this fascinating account and for the dedication and hard work of the team in making over 32,000 contacts around the world.

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at the Emergency Management BC PREOC,
14275 96th Avenue, Surrey, BC

Weekly Club Breakfast

Friday at 0800 local
ABC Country Restaurant at
600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hrs local
on 147.360 MHz (+) Tone=110.9

SEPARS Net

Tuesday at 19:30 hrs local
on 147.360 MHz (+) Tone=110.9

Announcements & News

SEPARS Monthly Workshop
Third Thursday, 1900-2130 local
Rm. 214, 13569 - 76th Avenue,
Surrey.

SEPARS Training

Fourth Saturday, 0830 local,
Firehall #1, 88 & 132nd Street,
Surrey

On the Web

ve7sar.net

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements can also be found on our web page, or via:

Twitter

[@ve7sar](https://twitter.com/ve7sar)

Photos
[Web Albums](#)

Coming Up In May: The SARC Annual Foxhunt



Let's Go T-Hunting

by Joe Moell KØOV

(reprinted with permission from the author)

VHF/UHF enthusiasts often install yagis and quads at their home stations. Many take them out on camping trips and use them on public service events. But did you know that some enjoy flying the freeways and beating the back roads with one hand on the steering wheel and the other on a rotating antenna mast? Perhaps you have seen these hams on weekends, intently driving and turning their beams. What are they doing? They are competing in hidden transmitter hunts.

If you've never experienced one of these mobile radio direction finding (RDF) contests, you have missed some of the greatest excitement a ham can have. While there are several names for it such as "fox-hunting" and "bunny chasing," in southern California this sport is almost always referred to as "T-hunting."

Transmitter hunting seems to be one of the best kept secrets in ham radio, even though dozens of hams here consider themselves to be regular hunters. They range in age from the teens to the eighties. Besides keeping the coordinated two-meter hunt frequency (146.565 MHz FM) hopping, some hunters love to hash over their exploits by the hour on their favorite repeaters.

The idea is simple: One or two hams take a transmitter, antenna, and some sort of distinctive audio source to an carefully selected spot, then make continuous or intermittent transmissions. Usually they remain stationary, though mobile "bunnies" are popular with some groups. Sometimes there are more than one "T" to be found. Surplus ammunition cans are often used as hidden transmitter enclosures. The hunters, as individuals or in teams, do their best to home in on the hidden station(s) with their mobile and portable RDF gear.

Fun, But Beneficial

T-hunters think their events are more fun than any other ham contest. You get to meet and socialize with your competitors both before and after the event. Usually, you'll find out your score and how well you placed before you go home. You may encounter your competitors along the way, with opportunities to try to "psych them out" or misdirect them. (Hence the southern California maxim: "Never trust anything said by a T-hunter or hider.")

"Techies" like the thrill of finding the hidden T with gear they made themselves. They relentlessly work to improve their setups. Mystery lovers and dyed-in-the-wool contesters love the challenge, because every hunt is a fresh start to a new adventure. Your past performances are forgotten. It's just your team and your equipment against today's hider and the other hunters.

At some point, every ham will find knowledge of RDF techniques useful, because it simplifies such chores as finding a neighborhood source of power line interference or TV cable leakage. T-hunters here frequently are called upon to track down sources of "spurs," intermodulation and noise that can plague amateur (and sometimes commercial) repeaters.

RDF plays an important part in Amateur Radio self-policing. In many areas of the country, including southern California, there is an active Amateur Auxiliary organization in contact with ARRL and district FCC offices, permitting volunteer ham RDFers to gather evidence leading to prosecution in serious cases of malicious interference.

There are several competitive hunt opportunities to choose from every month in Los Angeles, Orange, Riverside and Santa Barbara Counties. They are all different in some way, such as time or mileage scoring, day or night start, single or multiple transmitters, intermittent or continuous signal, wide or narrow boundaries. (Or perhaps there are no boundaries at all!)

Most hunts are on two meters with FM signals, but there are occasional FM hunts on the 50, 223, 440 and 1200 MHz bands. There have even been hunts for Amateur Television transmissions on 434 MHz.

Winning Isn't Easy

There are many ways to score mobile T-hunts. Due to traffic problems, "First-In-Wins" hunts are less common than "Low-Mileage-Wins" hunts in southern California. Odometer calibration differences are resolved by requesting hunters to obtain an odometer correction factor by driving a standardized course in advance of the hunt. This correction factor is called the Crenshaw Factor because the course runs along Crenshaw Boulevard for approximately 9 miles.

T-hunters have become very sophisticated at finding dastardly hiding places. With the right combination of location and antenna, they make it difficult for hunters to get reliable bearings. Like a ventriloquist, a good hider can make the signal appear to be coming from some other location. With careful planning (and a little luck), the signal's characteristics can cause the hunters to approach the transmitter from the most difficult direction, with impassable roads or other obstructions, even though the T may be easily accessible via other routes. Perhaps the hider will camouflage the setup so well that the hunters won't find the transmitter unless they literally trip over it.

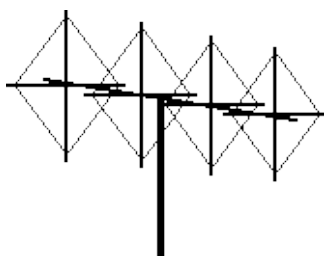
The most challenging of all southern California 2-meter RDF events are the All Day Hunts. Despite their difficulty, many enthusiasts like them best of all. The name is a misnomer, because these marathons often last the entire weekend. The transmitter(s) can be anywhere in the continental USA. The hunt starts in Rancho Palos Verdes. Hiding spots have included locations near Yosemite National Park (California), Las Vegas (Nevada), Yuma (Arizona), and St. George (Utah). The record path distance for a two-meter hidden transmitter signal to be heard at the starting point was set on the St. George hunt, well over 300 miles!

Not every T-hunt is this arduous, of course. Several clubs have sponsored hunts just especially designed for beginners to get things started. In some cases, the hiders make brief transmissions on a repeater, encouraging hunters to come out and find them. After a while, they give clues to narrow the search area. The idea is to give every participant a good first-time experience, including a story-telling session at a restaurant after the hunt.

While some hunters prefer to go it alone, most have more success by teaming up. The driver concentrates on handling the vehicle, while the DFER turns the beam and reads the meters. The DFER also handles maps and plotting, unless there is a third team member for that task.

Inexpensive Beams Work Fine

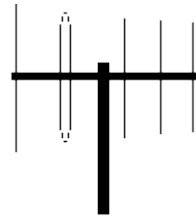
In our area, the Los Angeles basin, most hunters use some sort of beam antenna. Three to five element cubical quads are most popular. Usually they are built in "diamond" form with a PVC pipe or wood boom and



Strung wire 4-element diamond quad

elements made of thin wire strung on fiberglass spreaders. Variations include the "stiff wire" version, which is much more tree-resistant. (It can get mashed, but is easily re-shaped and returned to service, as compared to "strung-wire" quads which more readily suffer wire breakage.)

Yagis are second to quads in popularity. Commercial models work fine, provided that the mast is attached at a good balance point. Occasionally you will see some other kind of gain antenna, such as a "ZL special." Small-diameter loops are rarely used for RDF above 54 MHz because of their bidirectional pattern and low sensitivity.



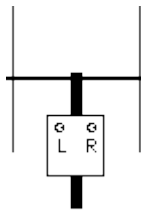
Vertically polarized 5-element yagi

No matter which gain antenna is used, it is important that to allow for quickly changing polarization. Hiders can use any wave polarization on most hunts, so hunters must attempt to determine the correct polarization and hunt with it. Hunting a horizontal signal with a vertically polarized beam, for example, causes the direct signal to be

attenuated. Reflections and scattered signals (multipath) from buildings and terrain features are enhanced relative to the direct signal when the wrong polarization is chosen. There are mechanical and electronic ways to select polarization on VHF beams.

Hunters need sensitive mobile RDF setups for events like the All-Day hunts. They achieve it with their long beams, plus GaAsFET preamps, noise-quieting meters, and SSB receivers (even when the hider is transmitting FM).

Homing Sets Sniff Well



Another type of RDF instrument, called the homing or dual-antenna RDF, has its place in the arsenal of the well-equipped hunter. These units have a pair of vertical antennas, a switching circuit, and a direction sensor with some sort of left-right indicator, such as a meter or a pair of LEDs. They are easy to use: When the indicator says LEFT, turn the unit left; when it indicates RIGHT, turn right. There is a sharply defined crossover at which the unit points toward the signal source direction.

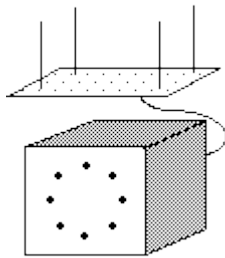
There are two types of dual antenna sets. One type is called a switched-pattern set and requires a receiver with AM detection. It is used mostly on the aircraft band. More popular with hams is the phase-front detector or Time-Difference-of-Arrival (TDOA) set. It is designed to work with any narrowband FM receiver that covers the frequency of interest. While they could be used in vehicles, these dual-antenna sets are used mostly for on-foot RDF, such as closing in at the end of a hunt ("sniffing") or for wilderness search/rescue work. Be sure to build or buy one with left-right indicators, or you won't know if the signal is coming from ahead of you or behind you.

Dopplers Have Their Place

An ideal RDF system would not require constant manual antenna turning. It would take directional readings

Let's Go T-Hunting (continued)

hundreds of times per second, and continue to indicate the bearing after the signal leaves the air. Doppler type RDF sets, though far from ideal, fulfill all these wishes. The typical four-whip antenna system can be mounted without drilling holes in the vehicle.



Doppler readouts usually feature a ring of at least 16 LEDs, and may also include a three-digit display in degrees relative to the vehicle. In the clear, a well-installed doppler has about ± 5 degree bearing accuracy. This accuracy is degraded by multipath, just like it is with the homing RDF, but "eyeball averaging" while the vehicle is moving helps counteract this problem. Although popular in places such as Cincinnati and the San Francisco Bay area, doppler RDF installations have not caught on among most southern California competitive T-hunters due to their lower sensitivity compared to beam setups. Vertically polarized doppler antennas are at an extreme disadvantage if the hider transmits horizontal polarization, especially if the signal is weak and non-direct.

On the other hand, dopplers are a popular choice of jammer hunters, who are usually tracking strong vertically polarized signals. They like the rapid indication update rate and the ability to quickly get bearings on short-

duration signals. Occasionally, you may see RDFers using both a beam and a doppler set on the same vehicle.

How To Learn More

While commercial RDF equipment is available, the majority of southern California T-hunters prefer to build their own gear. All you need to get started is a directional antenna, an attenuator to knock down strong nearby signals, and a receiver with S-meter. You may have it all right now! If so, it will only take a bit of installation work on the family car to get you going.

For equipment information, installation ideas, and hunting techniques, read *TRANSMITTER HUNTING---Radio Direction Finding Simplified* by KØOV and WB6UZZ, published by Tab Books (#2701). This book is available at many electronics and ham radio stores. It is also available by mail from ARRL Bookstore and from the authors.

Have a new ham radio adventure by going out on a hidden transmitter hunt. Be prepared for some pleasant surprises. Remember, every time you set out on a hunt, you never know where you'll end up, and you never know what you will find.

Dust Off Your Gear in Readiness for SARC's Annual RDF Foxhunt

SARC's annual foxhunt will be held on Saturday morning May 18th at Crescent Park in South Surrey.

The hunt will be followed by a barbeque for participants and their families. Bring the spouse, kids, grandkids, and dog and enjoy strolling in the forested trails while you hunt for the elusive quarry using your 2m handheld radio and beam or other directional antenna.

Club assistance is offered to construct a suitable antenna (see the March 2013 Communicator for details). The foxhunt is free, the BBQ is \$10 per adult and \$5 per child under 10 years.

More on the Foxhunt in the May Communicator so stay tuned for further details however, if you plant to attend you must advise Anton James VE7SSD at jamesadf@shaw.ca





Radio-Active Jinty Reid VA7JMR Nelson Eisel VE7NAE

Born and raised in Coquitlam, Nelson was the eldest of two boys. At school he was what is commonly known as a 'computer geek' and he is still very knowledgeable about computers. He attended a French Immersion school and though he was quite fluent he is out of practice now. Nelson's first job, in 1992, was a summer job beachcombing for logs in Smith Inlet near Bella Coola, using a war-surplus "Higgins boat" landing craft. He hopped across log booms for six weeks and didn't fall in the water until the last day.

One of Nelson's hobbies was building high powered model rockets and he obtained his level one certification. He made telemetry systems for high powered model rockets. In 2003 he obtained his Basic Ham Radio license but, because of other priorities in his life, became inactive in both hobbies.

He attended Simon Fraser university for 3 years, studying cognitive science. After university he went to work for the Air Traffic control Service where he trained as a Flight Service Specialist. This was an airport advisory service. His training for that job entailed training in Ontario and Prince Rupert. He worked in this field for 5 years. Nelson was posted to Castlegar for 2 years and was then transferred to Inuvik in the North West Territories which proved a challenging 2 year experience.

Living in Inuvik, and with the encouragement of John Boudreau VE8EV, Nelson rekindled his interest in ham radio. The frequent communication outages in Inuvik made operating radio very useful. Along with 3 other radio operators, Nelson became a regular ham radio operator. John Boudreau was Nelson's Elmer. Nelson and John were part of a two man team in Inuvik, and the first ground station to receive data from



NASA's NANOSAIL-D2 satellite showing the sail had opened. This meant, they told NASA that their satellite worked properly, before they had that data themselves.



In 2012 Nelson migrated south to BC and lived for a short while in Coquitlam before moving to live in Gateway, Surrey.

Nelson's fiancée Dee, lives in Minneapolis. Within the next couple of years he hopes to get married and will be moving to that area to live, which means he will have a new call sign. He will then become a father to Dee's 7 year old daughter.

Nelson joined SARC recently and though he is interested in getting involved in emergency services he prefers to wait until he is settled in the USA. At present he is working on learning CW on the internet. His full time job now is working at the BC Hydro call centre, which involves shift work.

Once he moves into a house in USA he plans on setting up a good antenna. Nelson has a Yaesu FT-767GX HF radio with an MFJ roller inductor tuner, a Ten-Tec counterpoise tuner, and an Outbacker OB-8 antenna bolted to his apartment balcony railing. He works digital modes with the soundcard on a laptop, old enough that it still has a real serial port. His other radio is a hand held "Chinese" TYT TH-UV3R.

In the past Nelson has studied laido, a Martial art using swords (don't mess with him folks), but he states, "to say I have any skill at it now would be disrespectful to the art". On a recent Tuesday night SARC Net, Nelson acted as net control and his clear voice tone lends itself well to radio. He did an excellent job, very professional. Welcome to SARC Nelson!

The Loop Antenna Project

John Brodie VA7XB

Over two days during the weekend of April 20/21, ten members of SARC got together to construct Foxhunting loop antennas, based on the design described in the January 2013 QST. The cost for each worked out to \$10, which covered the cost of PVC pipe, copper tubing, aluminum plate, clamps, screws, RG8X coax for the loop, and RG58 coax with BNC connectors for attachment to the radio. Within a couple of hours, all had completed his/her project including adjustment of the loop to the Foxhunt frequency of 146.565 MHz.

To assist with construction, Kelvin VA7KPH had made up two "story sticks" from paint stir sticks showing the location of holes to be drilled in the PVC handle. He also prepared a 4" round jig to facilitate



forming of the copper loop. When John VE7TI brought over his tubing bender, it also helped in making the sharp bends. Initially, the inner coax conductor was put inside the tubing before bending the copper in the belief that it would discourage kinking; after a few trials this was found to be unnecessary.

The photo (left) shows the completed prototype, with handheld radio mounted on the plate, the attenuator attached with Velcro and cables connected. Different radios may require a different type of mounting. For the prototype, a notch was cut in the



aluminum plate to allow mounting of the radio by the button on the back; this may not work for other radios. One member found that the belt clip on his radio would slip easily over the plate and retain the radio firmly in place. One problem we found was that not all RG58U coax is equal, as some of the purchased coax with BNC connectors had a type of braid that would not take solder (coax had been purchased at two different times). However, using some surplus coax from the junk box, we were able to make do.

The construction procedure is recorded below for future reference.

- Cut a piece of $\frac{3}{4}$ " PVC tubing 24" long, and drill holes as per measurements provided in the QST article. The holes in PVC for the large copper loop and coax balun are $\frac{1}{4}$ " diameter. Holes for the small loop are $\frac{1}{8}$ "
- Prepare a 28" length of coax with a BNC connector on one end and a cut end on the other. Don't strip the bare end until the coax has been wound round the PVC (to make the balun) and pushed through the hole.
- Cut an 11 $\frac{1}{2}$ " piece of RG8X coax and strip off the outer insulation and the braid, so you are left with only the inner conductor and dielectric.
- Bend a long piece of $\frac{1}{4}$ " copper tubing around the 4" diameter form until the ends meet, then cut it off with the tubing cutter. It is easier to bend first, and cut after. Leave a $\frac{1}{2}$ " gap between the ends. Use a reamer to remove the bur on the inside of the cut ends.
- Cut a 5" x 6" piece of $\frac{1}{16}$ " aluminum for the radio mounting plate. Use a file to clean up the rough edges and round the corners. Mark and drill $\frac{1}{8}$ " holes in the correct position to mount copper clamps for holding the plate to the PVC tube. Mount the clamps on the plate with $\frac{1}{8}$ " bolts.
- Insert the 11 $\frac{1}{2}$ " length of inner conductor in the copper loop and ensure it moves easily, but leave one end sticking out $\frac{1}{4}$ " or so.
- Insert the copper loop and inner conductor into the PVC tube.
- Cut a 3" piece of #14 wire. Clean it with steel wool, as it will be soldered. This will be bent into a 1" loop and inserted into the PVC tube. You will need to make sure the ends of the loop do not touch inside the PVC tube after soldering.
- Push the RG58 coax through the lower holes in the PVC tube, and wind the 4-turn balun, leaving sufficient length to attach the bared end to the small loop.
- Strip about 1 $\frac{1}{2}$ " off the end of the coax and solder the braid and inner conductor to the small loop.
- Connect an antenna analyzer to the BNC connector. Using needle-nose pliers or your finger nail, slide the inner conductor of the loop around until the antenna analyzer shows a sharp dip at approximately 146.565 MHz.



Offset attenuator kits were also purchased by a few members for assembly at a later date. The KØOV attenuator kit obtained from Marvin Johnston (marvin@west.net) at a cost of \$20 (for 12 or more) plus shipping can be put together in about 30 minutes. Only a little soldering is necessary, as all surface-mounted parts have

been pre-mounted on the board in advance, however a few caveats are in order.



It is highly recommended that you work under a magnifier and lamp using a fine pointed iron designed for printed circuits, as it is easy to short out adjacent parts of the board if too much solder is applied. The only parts that are soldered onto the board by the purchaser are the

potentiometer, the 4 MHz resonator chip, a diode and wires to connect the input and output coax, and battery. The 9 volt battery is best mounted inside the box (in my opinion), along with an on-off switch so that the battery doesn't have to be disconnected after use. The box in the photo is about the right size without crowding of components. So here's what you will need in addition to the attenuator kit to complete the project:

- A metal or plastic box about 2 ½" x 4" x 1" deep
- Two female BNC chassis-mount connectors
- A chassis-mounted on-off single pole-single throw (SPST) toggle or slide switch
- One short length of RG58 or similar coax with BNC male connectors on each end - length will vary depending on how you have assembled your antenna.
- A knob for the attenuator control
- Velcro to mount the box on the plate (or you can bolt it down)
- A BNC to SMA adaptor for your radio

All these items can be purchased from SMI in Langley, or RP Electronics in Vancouver.



More Than FoxHunting

A Practical Use For Your Antenna

Do you think your Foxhunting equipment is only good for having fun? Here's an idea from an experienced RF interference (RFI) hunter that will help identify the source of radio noise. RFI is getting to be a bigger problem all the time because of the proliferation of cheap electronics that haven't been properly filtered to reduce RF emissions; this includes LEDs which use switching type power supplies to create the DC that they require. Your tape measure beam or loop antenna plus attenuator and handheld radio is just what you need to hunt down that elusive RF source. Here's is a boiled down version of some advice that came off the RFI reflector:

Just about every full feature handheld offered to the Amateur market today has a receiver that covers .5 to 470 MHz or 1 GHz. A 3 element yagi for 150 MHz is easy to

build (or buy). An attenuator is very helpful. Coax connects the yagi to the attenuator and the attenuator to the radio. This basic setup should be able to pinpoint a source to a pole or a house.

You need a receiver that can listen on the affected frequency in AM mode and has some means of showing signal strength. A directional antenna at the frequency of interest is very useful. A means of keeping the maximum signal strength indication at about midscale is required. That means the receiver must have an attenuator or an external attenuator must be used.

Practice on known signals to develop skill. Then set out to locate the RFI.





SEPAR Report

Kelvin Hall VA7KPH



SEPAR - PREPARING FOR EMERGENCIES—Part 2

Surrey Emergency Program

The Surrey Emergency Program is working to make sure Surrey is ready in the event of an emergency. Our Emergency Program Coordinator and staff regularly meet with the Surrey Emergency Program Volunteers and GVRD jurisdictions to discuss and plan emergency preparedness. Our preparations include:

- Table-Top Exercises - by using a model, we walk through a pre-planned disaster scenario to test our resources.
- Mock Disaster Exercise - utilizes our field and emergency response personnel to respond to a full-scale scenario as if it were actually the real event.

The Surrey Fire Service has been responsible for the Emergency Program since January 1994. Surrey's Emergency By-law provides for the establishment, administration and operation of an Emergency Plan and Program for the City.

The Surrey Emergency Program offers presentations on personal emergency preparedness and Neighbourhood Emergency Preparedness to neighbourhoods, private groups, schools, and organizations upon request.

Contact the Surrey Emergency program by email at surreyemergencyprogram@surrey.ca or call 604-543-6795 for more information.

Reception Centres

The City of Surrey designated 6 reception/evacuation centres in to support residents in the event of a disaster.

In the event of an emergency or disaster, reception centres will be established for registration and inquiry.

The number of reception centres opened will depend on the nature of the situation and the evacuation measures. Listen to your battery-powered radio for further information.

Emergency Social Services (ESS)

Emergency social services (ESS) are those services required to preserve the well-being of people affected by an emergency or disaster.

The ESS program is a **provincial emergency response program**, but involves various levels of government. The program gives short-term help to British Columbians who have to leave their homes because of disasters like fires, floods or earthquakes.

Surrey's Emergency Social Services Program is a team of City of Surrey staff and volunteers, who are called out at any time of the day or night to respond to the needs of people affected by an emergency.

Surrey Emergency Program Amateur Radio (SEPAR)

"Good evening to all stations listening, and welcome to the Surrey Emergency Program Amateur Radio Net."

This is what you'll hear when you tune in to Surrey Emergency Program Amateur Radio (SEPAR) weekly net.

SEPAR volunteers helping out in emergencies

SEPAR volunteers are **trained radio operators** willing to take direction and help out when needed in an event. The organization is directed and guided by the Surrey Emergency Program.

SEPAR members would be called out at the request of the Emergency Coordinator or the Provincial Emergency Program (PEP). Volunteer callout is done in a number of ways, including

- paging,
- telephone, and,
- of course, Amateur Radio.

SEPAR provides the station equipment and training. You get the satisfaction of doing your part in an emergency.

In the event of a natural disaster, it is very probable that existing communications would be severely degraded, or even knocked out entirely. As a part of Surrey's Emergency Plan, SEPAR has been developed to be the link between the responding agencies, government department and support teams.

All of these agencies will need to be in contact with each other and the Field Response Centre(s), both at the disaster site and at area Operations Centres

SEPAR is recruiting volunteers for this essential community service and if you are interested I would be pleased to meet with you to provide more information. You may contact me at VA7KPH@separs.net

We need to remember that we do this training because there is always the real possibility that a major event will occur. It is not a matter of IF a major disaster will occur but WHEN.



More Ham News

CQ launches online photo gallery

CQ magazine has announced the launch of the online CQ Photo Gallery to supplement photos published in the magazine.

"We shoot photos at many events, and receive many photos from readers, that we don't have space to put in the magazine," said CQ Editor Rich Moseson, W2VU. "But we still want to share them with our readers. The new CQ Photo Gallery allows us to do that."



The photo gallery resides on the [flickr.com](http://www.flickr.com) web site and is organized into albums called "sets". Initial sets include CQ cover images; the "CQ Garage," featuring ham radio license plates from all over; news photos from the FCC's field hearing on communications lessons from Superstorm Sandy, and reader-submitted photos.

Moseson recommended that readers check into the gallery site frequently, as new photos will be added regularly.

The CQ Photo Gallery may be accessed at <http://www.flickr.com/photos/cqphotogallery/sets>

A reminder too that SARC photos are available through our website ve7rsc.net and via our Google album pages.

SEPAR Meetings

Third Thursday of each month starting at 1900 hrs

Fourth Saturday of each month starting at 0900 hrs

Location and event schedule can be found at separ.shutterfly.com – click on the calendar tab



The 3rd annual 'Day of the YLs' will be held on 18 and 19 May 2013. This weekend is intended to gather on the air all amateur radio women around the world and, of course, all OMs are invited to participate.

A world wide meeting that you can not miss. Perhaps we can encourage some of the SARC and SEPAR YLs to participate!

For more information, please see <http://www.eurao.org/en/node/472>

QST Video Contest Winners

The ARRL has released on YouTube the winning videos in the 2013 QST video contest. The contest was for videos up to 5 minutes in length that illustrate the excitement of Amateur Radio. The first place winner receives \$500; the second place prize is \$250 and the third place prize is \$100.

1st place Levi Maaia, K6LCM. Highlights of the activities of the Near Space Exploration Club at the Anacapa School in Santa Barbara, California.

Watch 2013 QST Video Contest 1st Place Winner at URL: http://www.youtube.com/watch?feature=player_embedded&v=ykgdazTqZbM

In 2nd place is Kevin Thornton, K5KVN with a video of the 2012 first-time "activation" of Horseshoe Island on Beaver Lake in northwest Arkansas as part of the US Islands awards program. Watch the 2013 QST Video Contest 2nd Place Winner at URL: http://www.youtube.com/watch?feature=player_embedded&v=QFBA5LPyPHQ

The 3rd place winner is David Fugleberg, W0ZF, showcasing the techniques and excitement of VHF contest "roving" in the mid-west. Watch the 2013 QST Video Contest 3rd Place Winner at URL:

http://www.youtube.com/watch?feature=player_embedded&v=p-CDR9vPYf8



QRM ...from the Editor's shack

*Do you have a photo or bit of club news to share?
Something to sell or something you are looking for?
Email it to SARCcommunicator@outlook.com for inclusion in
this column.*

The '20' Club

A new CW net has started recently with a goal of assisting local hams to improve their code speed. Each Sunday session starts with a welcome message followed by a QRZ. It is all quite informal with the intention of it being a non stressful and relaxed atmosphere. People generally check in at random and throughout the session, and send whatever comes to mind.

We loosely follow the first come first served and try to keep it rotating through the participants, much like the two meter rag chews that spring up from time to time. As mentioned previously, we also monitor the VE7SUN repeater*, and listen for those who might want us to listen for them during the conversation breaks or have some other related info to share.

The only speed issue is that we try to match the sender as best we can. Hand keys are the standard mode, but if all you have is an electronic keyer, just keep the speed matching whomever sent last. Maximum speed is 20 WPM to keep everyone in the game.

It is all about offering a place for fellow hams to practice CW mode with each other in a non judgmental and supportive way. We welcome any and all participants.

Let me know if I can provide more info, and I am looking forward to hearing more of you next Sunday at 28.020 MHz at 19:30 PDT.

*note: VE7SUN is at 147.340 (+) tone 107.2

~ Dave VE7AHT

Get Ready for the AGM on June 12th

SARC's Annual General Meeting will be held on Wednesday June 12th at 7 pm at the usual meeting location. The proposed agenda will include:

- Committee Reports
- Annual Financial Statement
- Discussion and vote on proposed changes to the Bylaws
- Election of New Directors

A notice will be coming out several weeks in advance of the AGM to advise the details of the proposed changes to the Bylaws.

Prior to the AGM, members may be contacted and asked to consider running for an executive position. We hope to supplement the seasoned crew with new, enthusiastic members who are willing to devote a few hours a month to the betterment of SARC.

Mike VE7ACN was out to Bill Gipps project recently and built a vertical dipole that he put up in the bushes. The first call he worked was a Russian station on 17 meters 599 CW! On Sunday he got down there just after Bill had worked a Russian station on 17 meters on the project's 80 meter dipole. Mike worked it on his antenna and got a 57 versus Bill's 55 signal report on SSB.

Oh - I forgot to mention that the antenna was only 3 feet off the ground! Just goes to show that you don't need an antenna worth hundreds to work good DX.





Page 13—News You Can Lose

The Lighter Side of Amateur Radio

Canada Newswire reports that amateur radio can help minimize the impact of a zombie pandemic.

TORONTO, April 9, 2013 /CNW/ - The threat of a zombie pandemic, commonly known as a zombie apocalypse, is ever present in today's world of widespread genetic engineering and frequent international travel. Fortunately, Amateur Radio can help minimize the impact of such a catastrophe and as such, the Central Toronto Amateur Radio Club (aka CenTor) will be offering an Amateur Radio licensing course starting May 1, 2013.

Often called "ham radio", Amateur Radio is a non-commercial radio service that allows licensed operators to use various types of radio communications equipment to communicate with one another, both locally and around the globe, for both public service and recreational purposes. Amateur Radio operators, often referred to as "hams", are federally licensed by Industry Canada and are allowed to use specially allocated radio frequencies to carry out their operations. Hams come from all walks of life and are located all over the world.

"During a zombie apocalypse, the only reliable form of communication would be using Amateur Radio, as cell-phones and the Internet will become useless", said Don

Trynor, President - CenTor, and licensed Amateur Radio operator with the call sign of VA3XFT. "By teaching people to use Amateur Radio, we can provide them with a valuable skill that they can use

in times of emergency or natural disaster to stay in communication with one another," Trynor added. He further noted that while the likelihood of a zombie apocalypse actually occurring is very low, people who are prepared for one would also be prepared for any disaster that might actually occur.

The Amateur Radio licensing course, which will be 10-weeks in duration, will cover a variety of topics, such as basic electronics, radio wave propagation, antenna theory, regulations and operating practices, plus much more. For more information on this upcoming course, please check out the following link at: <http://va3cta.net/get-a-licence/>

It just goes to show... if your 'angle' is off-beat enough, the media will print your story—Ed



Another Ham Song...

A tongue-in-cheek song about life on the amateur radio bands. Performed, written and produced by Steve MJOLE at the Jersey Amateur Radio Society and Jersey Contest Group Christmas dinner.

<http://www.youtube.com/watch?v=5QsyWLO2ljY>

NASA | SDO: Three Years of Solar Activity in Three Minutes

http://www.youtube.com/watch?feature=player_embedded&v=piuKlpJmjfg

Wanted

John VE7TI is looking for a reasonably priced rotator.

Please contact John at ve7ti@separs.net

Wanted

Rob VE7CZV still needs an auto-tuner for his HF rig, specifically for 80m.

If you have or know of one that is available at a good price, please contact Rob via robgil@telus.net



The Contest Contender

Fred Orsetti VE7IO

Rookie Roundup SSB 2013

The ARRL Rookie roundup SSB took place on Sunday April 21 and we participated from VE7IO.

Pamela Hamilton, VE7PFH, who has been licensed since November 2012 joined in for a couple of hours of training and fun on ham radio. Pam quickly adapted to the operation of the equipment and after a very short introductory session on search and pounce moved to the running mode. Once in the running mode she started making contacts sometimes in excess of one per minute and the chart below shows how her activity increased. The QSO's/hr at 30 was when Pam was in the "run mode" and the rate continued in the next hour but unfortunately Pam had to leave for another appointment.

I provided the station and set up for Rookie Roundup but the training was handled by Brett, VE7GM, who did an outstanding job of helping Pam to relax and build her confidence. Brett had Pam into the run mode very quickly and assisted her with the logging. Pam had a strong voice and used phonetics with ease.

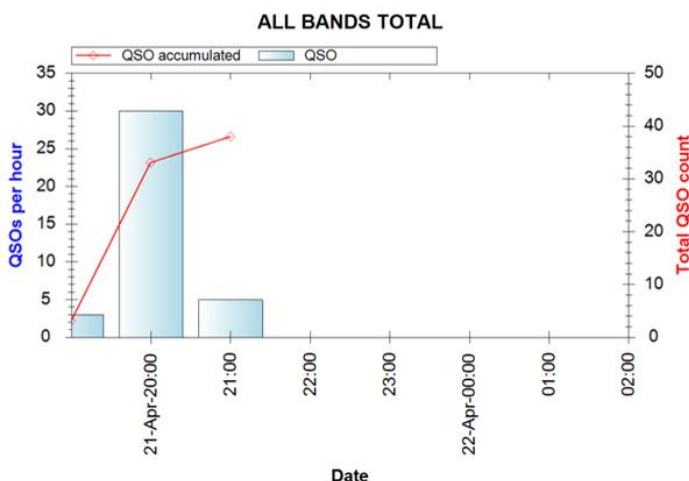
It was a pleasure to have Pam and Brett in the shack and I look forward to more contests in the future. I also had a good visit with Don and enjoyed a hot dog for lunch.



Brett helping Pam with some fine points



Pam is all smiles after her successful run



I'm not sure if Don, VA7GL, is trying to work RR on his iPhone but I doubt if he made any Q's

Clydebank Radio Ham Helped To Win Back The Falklands

news.scotsman.com

Armed with a shortwave radio in a room in his Clydebank home, he was Britain's secret weapon in the Falklands war.

Les Hamilton was the amateur radio operator who told the British government the islands had been invaded and the only person in Britain to be in regular radio contact with islanders during the Argentinean occupation.

He was the vital link through which details of enemy troop movements and the success of RAF bombing raids were fed back to the Ministry of Defense.

The information he provided was considered so important to the success of the war that within minutes his information was relayed to the task force in the South Atlantic.

Yet until now Hamilton's role has been a closely guarded secret, known only by senior British politicians, military intelligence officers and a select band of amateur radio enthusiasts.

With just weeks to go before he and his wife Pilar are due to fly out to the Falklands for the 20th anniversary celebrations of the liberation, Hamilton has told Scotland on Sunday of the excitement and fear of being the only outside link for islanders during the dark days of the 1982 occupation.

Hamilton is one of just 16 people to be invited by the Falkland Islands government.

He had been in contact with amateur radio operators on the islands for more than a decade when, on April 1, his Antarctic friends started becoming jumpy about a possible Argentinean invasion.

The following day he received a fateful radio message from his friend Bill McLeod at Goose Green - the Argentinean flag was now flying over the islands.

Hamilton was the first person outside the islands and Argentina to know that the invasion had taken place. He quickly phoned the MoD, who informed the Prime Minister Margaret Thatcher.

Within three days a naval task force had been assembled and was sailing for the southern seas. Britain was at war and Hamilton and his network of Falkland Island radio hams were now the only link between the Falklands and the British government.

But the Argentinians were already aware of the threat that the radio hams posed and started seizing radio equipment from isolated settlements across the islands.

They visited Tony Pole-Evans - a farmer living on tiny Saunders Island, about 80 miles north-west of Port Stanley and took down his antenna.

But they were unaware Pole-Evans had another, smaller, radio system which had enough power to travel the 7,000 miles to Hamilton's Clydebank radio station.

Despite the threat to Pole-Evans' life if he was caught, the two friends stayed in daily radio contact throughout the war - a crucial source of information for British military intelligence.

"At the start, when the conflict broke out, I was excited, thrilled even at being at the centre of these amazing events, in the right place at the right time," Hamilton said.

"About 24 hours before April 2, friends on the Falklands were very jumpy, so when the message came through from Bill McLeod, a friend from Goose Green, about the Argentinean flag now flying over the islands I passed it straight on to the Ministry of Defence.

"But towards the end we were warned by a military intelligence officer that Tony would be taken outside and shot if he was caught, so I was very frightened for him."

Just before the invasion, the pair had devised a special code which allowed them to stay in contact and avoid Argentinean attempts to monitor radio communications from the islands. Each daily contact began with Hamilton announcing a number, which referred to a personal code known only by Hamilton and Pole-Evans and led both to retune to a specific radio frequency.

Once both were at the new frequency, Hamilton would take Pole-Evans through a list of questions supplied by the MoD about Argentinean troop movements and the success of British bombing raids.

Pole-Evans would answer as briefly as possible to avoid his transmissions being detected by the Argentinean military. The occupying forces tried to enforce radio silence on the two main islands but did not have the manpower to occupy all of the 200 islands which make up the Falklands.

(Continued on page 17)



Tech Talk

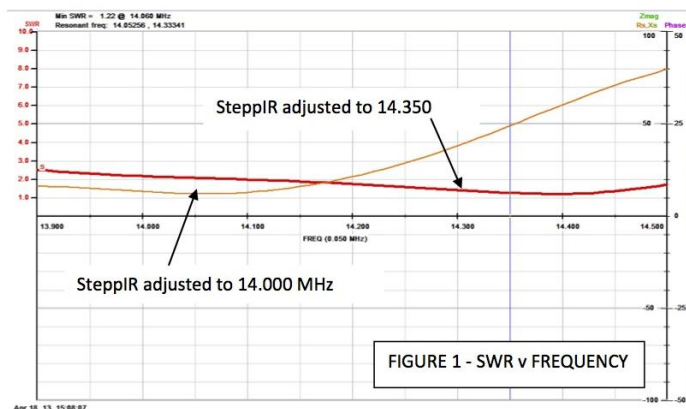
John Brodie VA7XB

My Antenna Adventures—Part 1

I recently purchased a Carolina Windom 80 antenna and, after it was erected, immediately experienced some puzzling problems, as it would not take power from the transmitter, confirmed by high and erratic SWR measurements using a hand-held meter. The full story will be related in Part 2 next month but my first step was to acquire an antenna analyzer with more sophisticated features than the popular instruments and use it to help me with the diagnosis.

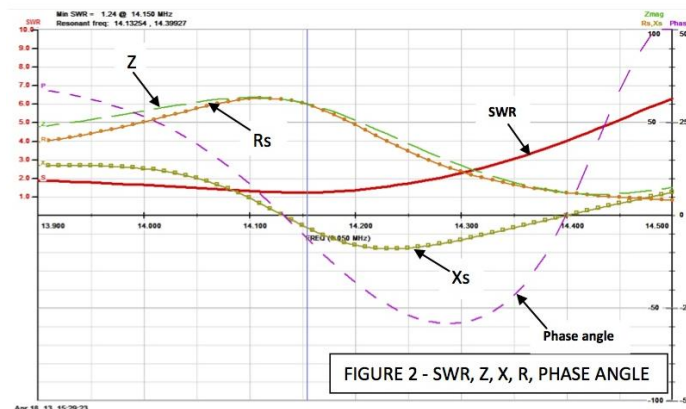
The AIM 4170C analyzer was recommended by Jim VE7FO as a suitable instrument, so I purchased one from Array Solutions. The AIM can do many advanced analytical chores and plot graphs, which is an advantage if you want to see results without the need to make and record a number of spot readings. It allows selection of the desired parameter for the plots from the menu, any or all of which can be displayed simultaneously. It also allows successive re-scans so that changes can be seen but retains in memory the raw data only for the most recent scan.

The initial step was to get familiar with the instrument's many features, which I did by making some measurements on my SteppIR beam in order to document its characteristics for future reference. I ran scans of SWR versus frequency for the SteppIR set to resonate on each of the HF amateur bands (2 curves, one with the antenna set to the low end of the band, and the other to the high end). The resultant graphs showed, as expected, a low SWR on all bands with the minima near the SteppIR operating setpoint. In the interest of space only the 20 m curves are shown in Figure 1, but those for other bands displayed a similar pattern.



Then, I wanted to compare the AIM measurements with two other popular analyzers - an MFJ 359 and Comet CAA-500 - to see if the readings agreed, because my measurements on the Windom with different instruments did not agree. However, the results this time (on the SteppIR) were very comforting, as shown in the table. The SWR agreed very closely amongst the 3 instruments, and Rs and Xs also compared favourably between the MFJ and the AIM. The Comet does not read Xs (reactance); rather it shows SWR and Z (impedance) so only the Comet's SWR reading is comparable with the other instruments. These results gave me reason to believe that at least with a "well-behaved" antenna system, the readings of the 3 instruments should be trusted.

Figure 2, which shows plots of several other parameters, illustrates some basic antenna/transmission line relationships.

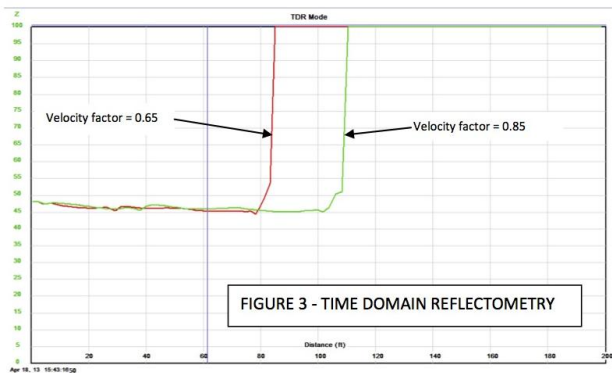


For example, the resonant frequency of the system is the frequency at which the reactance changes sign from positive (inductive) to negative (capacitive), i.e. the point at which the net reactance is zero. The phase angle shows the same thing, where it crosses the X-axis. Note that there are two resonant frequencies - the first where the phase angle goes negative at 14.135 and again where it turns positive at 14.399. However, the second one is not only at a high SWR point, but is outside the 20m ham band. At the resonant frequency the Z curve coincides with the Rs curve because the reactive component at this point is zero. In a system where Rs does not equal 50

(Continued on page 17)

ohms and reactance is present (typically because the antenna is too long or too short), the frequency of minimum SWR will likely not be the same as the resonant frequency. In this case because the antenna is very nearly the right length, the resonant frequency and frequency of minimum SWR are very close.

Having completed this test with satisfying results, I then tried another feature of the AIM instrument. It has a mode called TDR (time domain reflectometry). I do not profess to have any understanding of the theory of TDR, but the results are easy to understand. In order to use TDR you must enter the velocity factor of the coax in question. Now the SteppIR beam is connected to the shack by 60 ft. of what is supposed to be LMR-400, connected directly to an Alpha Delta surge protector which is connected to about 20 ft. of RG213 or RG8 coax leading to the radio. Both feedlines are rated at 50 ohms impedance. The velocity factor for Belden LMR-400 and RG213/RG8 are 0.85 and 0.65, respectively. However, my LMR-400 coax is a Chinese import for which I have no specs. Despite having two different types of coax connected together, only one value can be entered in the TDR setup. After entering the velocity factor of 0.85, I hit "scan" and waited for the graph to plot.



(Continued from page 15)

Outlying settlements were able to use radio to communicate with each other and doctors based in Port Stanley.

Pole-Evans would listen in and work out which settlements were free of Argentinean troops and then pass on the information to Hamilton, who had a huge map of the islands on his wall. Hamilton would then phone the MoD.

The former printer told Scotland on Sunday: "Tony was able to get information on troop movements, the location of minefields, and how well British bombing missions by Harriers had gone. When I was debriefed after the war, I was told our information was beamed out to the British Task Force within minutes of my call because it was so useful."

Using their 35-foot antenna connected to 1,000 of radio equipment, the Hamilton's also managed to intercept Argentinean military communications which Pilar - a lecturer in Spanish at Strathclyde University - translated for the MoD.

After the war Hamilton received letters from both Margaret Thatcher and a senior Army official in charge of military intelligence thanking him for his efforts.

The figure shows the result - impedance of the transmission line versus distance. Where the line turns vertical is the point at which the feedline is connected to the antenna. Now as you can see this graph for 0.85 velocity factor says my transmission line is 110 ft. long. I know this is not true, as the total length is around 80 ft. So? Change the velocity factor to 0.65 and bingo, the length now shows around 80 ft. I suspect my "LMR-400" has the characteristics of RG213 or RG8 and perhaps the product I purchased is not what it was claimed to be. If another type of coax with different characteristic impedance was connected in series or there was an impedance bump from a faulty connector or break in the line, the graph would show it. TDR looks to be a very useful feature of the AIM analyzer. However, having completed the preliminaries now I'm ready to do some diagnostics on the Carolina Windom. Come back next month for Part 2 of my "Antenna Adventures".

Comparison of SWR Meters/Analyzers
with SteppIR beam adjusted to 14.100 MHz

		Frequency				
		14.0	14.1	14.2	14.3	14.4
AIM 4170C	SWR	1.8	1.4	1.3	2.1	3.7
	Rs	49	62.9	52.9	26.5	13.4
	Xs	28	13.1	13.1	14.1	1
	Res freq					14.14
MFJ 359	SWR	1.7	1.4	1.4	2.1	3.5
	Rs	53	62	48	25	13
	Xs	23	15	16	10	0
	Res freq					14.15
Comet CAA-500	SWR	1.8	1.4	1.4	2.1	3.4
	Z	63	68	57	32	15

Hamilton's visit to the Falkland Islands for the anniversary on June 14 will be the first time he and Pole-Evans have met. Pole-Evans, now 82, told Scotland on Sunday: "I am looking forward to meeting Les for the first time. It was a very frightening time but we did our bit."

Sam Bailey, a spokeswoman for the Falkland Islands government, said they would be delighted to welcome the Hamilton's to the islands.

Hamilton will find himself with figures from the war including Brigadier David Chaundler, who commanded 2 Para after the death of its commander H Jones at the battle of Goose Green, and Rear Admiral Sam Salt, who was in command of the vessel HMS Sheffield when it was struck by an Argentinean Exocet missile.

Hamilton said he regarded the invite as "a reward" for the work he and his contacts in the islands had done during the conflict. More importantly it was an opportunity to meet them.

"I am absolutely delighted to be going out to see friends in the flesh that I have been speaking to via radio for years," he said.

~Submitted by Johnny Rampone VE7



More News

More On Foxes

This FoxHunt video covers beginner's tips and tricks on amateur radio fox hunting/ direction finding and includes details to build a DIY Yagi antenna.

The YouTube description says: "For those not interested in the ham details you might want to skip to the last 3 minutes starting at time 33:00. In the last 3 minutes of the video 4 young kids go out to rescue the poor lost Easter Bunny and his basket of candy. The Easter bunny is wearing a radio transmitter so this fox hunt becomes an Easter Sunday bunny hunt. The boys did great and had no problem learning to use a ham radio and directional antenna to locate the lost bunny."

Our fox, aka bunny, was the Byonics micro-Fox 15 which is a 15mw transmitter in the 2 meter ham band. This fox is sold by a company local to my area at URL:

<http://www.Byonics.com/>

Watch Rescue the Easter Bunny - Ham Radio Fox Hunting for Beginners at URL:

<http://www.toddfun.com/2013/04/04/rescue-the-easter-bunny-ham-radio-fox-hunting-for-beginners/>

LED Bulb Suspect

We recently found information on some troubling LED light bulb issues. The item says: 'I recently changed six halogen down-lighters to more energy efficient LED bulbs. Unfortunately when the lights were switched on, the signal on my radio was wiped out!'

To try and figure out this conundrum, a batch of cheap, generic 12V LED bulbs were sent to a lab which found that when a digital radio was placed within a few metres of the switched-on bulbs the signal went fuzzy. When the radio was placed within a few centimetres of the LED bulbs, it cut out all together.

The plot thickens

LEDs are ultra energy efficient light bulbs that can last up to twenty years and have been hailed as the future of home lighting. There are other accounts of LED bulbs affecting radios, with AVForums also collecting stories. Nick Tooley shared his experience:

'I had the same problems with LED bulbs wiping out DAB reception and tried several types of bulbs, but to no avail.'

And it seems that the issue may not just be limited to digital radios - TVs may also be affected. After fitting LED down-lighters in his kitchen, he noticed the following problem:

'While the lights are much better, we then by accident noticed that the digital TV would not work (I was complaining that we had no reception at all, did not make any sense, began to think that there had been some sort of catastrophic disaster which stopped the TV stations from broadcasting...lol) then someone turned off the ceiling lights in the kitchen and, hey presto, on came the TV.'

Shedding light on cheap bulbs

So what bulbs are affected? The lab tested three 12V generic LED bulbs and also compared them to branded 240V GU10 LEDs and some halogens. They found only a very minor interference with a radio signal. So at this stage, the issue seems to be limited to cheap knock-offs rather than branded goods.

They have only done preliminary tests on this problem, so no concrete conclusions are available on why this is happening or how widespread this problem is.

Wireless Lighting - Ham Radio Style

James Sanders AG6IF has released a short video showing a fluorescent light tube being lit by a 2m 5/8th antenna.

He states: 'After watching a most excellent "RF Light show" presentation by AA6DD at the Moreno Valley ham club meeting, I wanted to map out my 5/8 wave mag mount, using a fluorescent light tube. The 40w 48 inch tubes are still in the plastic wrapper. NO wires needed!! I am using a 145.520 simplex frequency and my Yaesu ft-2600 is the exciter running full power. The antenna is a Cushcraft 2m/440 5/8 wave NMO mag mount antenna. Voltage is high on the end, and low in the center where the current is the highest.'

Watch Wireless lighting -- ham radio style at URL:

http://www.youtube.com/watch?feature=player_embedded&v=SLjkq8ESfS0



Sea-Pac Hamvention

May 31—June 2nd at the Seaside Convention Center in Seaside, OR.

The 2013 Sea-Pac convention includes [numerous exhibitors](#) of new equipment as well as [flea market tables](#) where you can find lots of bargains on parts and vintage gear or perhaps sell some of your old equipment. If you don't want to set up a table, you can also sell equipment on consignment through the [RAGS Country Store](#).

As usual, there will be a full slate of [Seminars on Saturday and Sunday](#), as well as a [Workshop on Friday](#). If you're looking to upgrade your license, [VE testing](#) will be available on Saturday morning, but you need to pre-register.

Pi Anyone?

The [Raspberry Pi /DStar amateur radio group](#) on Facebook combines two hobbies together, The Raspberry Pi computer and [D-STAR radio](#). The group wants you to know about their R-Pi/D-STAR amateur radio net which will be conducted most Monday Nights on [REF026A \(Vancouver, BC Reflector\)](#).

Repeaters, [DVAPs](#) and [Dongles](#) are welcome to connect. The net starts at 1900 hrs PST local time (or 0300 hrs GMT Tuesday morning.)

While D-STAR radio is still slow in gaining popularity among ham radio ops due in large part to the cost of [ICOM radios](#), this type of net provides an example of the excellent opportunities this radio-internet connected medium can afford to techies worldwide who hold amateur radio licenses.

What's Coming Later in 2013

- May - our annual Foxhunt plus (at the general meeting) preparations for Field Day and how you can do your part to increase our 2013 FD score by another 50%
- June - our AGM and final countdown to Field Day, which is on the weekend of June 22/23

Also planned is a guided tour of SARC's new repeater installation located on the roof of a 36-story hi-rise -the view is great!.

Ham Radio Introduction video

Tomas Hood NW7US has made available this video which provides an introduction to amateur radio. Watch Modern Amateur Radio Hobby - an introduction in HD-1080p at URL:

http://www.youtube.com/watch?feature=player_embedded&v=K40HpljDLRs

Behind the scenes of Last Man Standing

The hit ABC sitcom, *'Last Man Standing'*, starring Tim Allen as **Mike Baxter, KA0XTT**, has always had a real amateur radio station as part of the set.

In Episode 217, the radios are no longer relegated to set dressing, but are actually used by several cast members, and form a major part of the storyline.

The show's Producer, **John Amodeo, NN6JA**, has long been trying to get everyone in agreement, from the writers, up to the network, and finally it happened, amateur radio hits the big time. This video won't tell you what happens, because the show has not aired yet, but it will show you some of what went on behind the scenes to make it all happen.

For those concerned about such things... all the radios were used on the lowest power settings possible, and transmitted into dummy loads. The studio is designed to stop RF from getting in, or out. A mobile radio was used to check that no RF got out of the studio. The dummy loads were placed physically close to each other, allowing each radio station to hear the minute amount of RF that "leaked" from the dummy loads. The audio heard in the final, on-air version of the show, was a mixture of audio taken from the clean audio recorded on set, audio from the receiving radio, and actual ham radio transmissions.

Watch Ham Nation - "Last Man Standing" - Episode 217, "The Fight" - Behind The Scenes at URL:

http://www.southgatearc.org/news/february2013/ham_radio_in_upcoming_episode_of_last_man_standing.htm



RAC News Radio Amateurs of Canada

RAC completes Review of Amateur Radio Exam Questions

2013-04-27

Industry Canada had issued a request for proposals to undertake the review in December 2012. RAC engaged RAQI to collaborate on the French language component of the work and submitted a response to the proposal. The \$20,000 contract was awarded to RAC late in January.

The first phase of the contract, completed on March 13, consisted of a complete review of all the questions and answers used for amateur radio certification in Canada. At the end of this phase RAC delivered a comprehensive set of recommendations to improve and modernize the question banks. In most cases this involved detailed editing of existing questions but proposals were also made to delete or replace obsolete or inaccurate questions and add questions on aspects of amateur radio that had grown in importance since the last review.

The review concentrated on the accuracy and clarity of the questions and answers and recommended changes where required to eliminate possible confusion over the correct answer to each question. Some errors were easy to identify such as typing mistakes showing an obviously incorrect answer as correct. Others, particularly related to ensuring that all incorrect answers were truly incorrect, required more careful study. The review team took special care in comparing questions in both languages so that the English and French versions conveyed the same information.

Clear, accurate and understandable exam questions are an important element in making amateur radio accessible to all Canadians. RAC sees an up to date and well functioning exam system as an important element in bringing more people into amateur radio to ensure its continuation and growth, a priority objective of the national organization.

On April 4th, Industry Canada officials kicked off phase 2 of the project by providing a preliminary reaction to the RAC recommendations made in phase 1. Over the next 13 days the RAC-RAQI team reviewed the Industry Canada comments and where appropriate provided additional comments and recommendations.

The first phase had identified most areas of needed change and as a result the Phase Two report contained a

significantly smaller set of recommendations. Industry Canada will make the final decision on changes to the questions after considering the RAC Phase 2 report. However the exchange of comments so far suggests that the RAC review will lead to a significant improvement and updating of the question banks.

RAC understands the importance of amateur radio courses and educational material developed and delivered by dedicated volunteers across the country. Changes in the question banks can lead to increased work by these volunteers and the Review Team worked to propose changes in ways that will minimize the updating. Many questions will remain as they were before the review. When proposing deleting obsolete questions the Team recommended replacement questions so that question numbering of the unchanged questions would not have to be changed.

RAC is already planning for the transition. Once Industry Canada makes public the updated questions banks, we will prepare information identifying where changes have been made to assist instructors in modifying their course materials and examiners in preparing for the change. As has been mentioned in previous bulletins, the curriculum has not been changed. The topics addressed in the exams and consequently in courses and educational material remain the same. The changed questions will assess the knowledge of these same topics but should be clearer, more accurate, more understandable and relevant to modern amateur radio.

A great deal of effort has gone into the review and we are happy that it is being received well. RAC will continue to work with Industry Canada through existing consultative arrangements to provide Canadian radio amateurs with the best possible circumstances to pursue their hobby. As well, based on the success of this project, RAC looks forward to competing for contracts on significant projects related to amateur radio if the opportunity presents itself in the future.

For more information contact Glenn MacDonell, Project Manager, Question Bank Update Project and Deputy Director Ontario North East, (ve3xra@rac.ca).

*Geoff Bawden, VE4BAW
President and Chair RAC*

The SARC Calendar ...places to be in Surrey for Amateur Radio in the month ahead

May 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28 	29	30	1	2	3 Weekly SARC Breakfast 8:00 ABC Restaurant 74th & King George Blvd.	4
For details on all SARC events, go to ve7sar.net For details on all SEPARS events, go to separ.shutterfly.com/calendar						
5 Maple Ridge ARC Swap Meet	6	7 SEPAR NET 7:30 SARC NET 8:00	8 SARC Monthly Meeting	9	10 Weekly SARC Breakfast 8:00	11
12	13	14 SEPAR NET 7:30 SARC NET 8:00	15	16	17 Weekly SARC Breakfast 8:00	18 SARC FoxHunt & Barbeque Day of the YLs
19 Day of the YLs	20	21 SEPAR NET 7:30 SARC NET 8:00	22 SARC Exec Meeting	23	24 Weekly SARC Breakfast 8:00	25 Hyack International Parade CONTEST: CQ WW WPX CW
26 CONTEST: CQ WW WPX CW BCARCC AGM	27	28 SEPAR NET 7:30 SARC NET 8:00	29	30	31 Weekly SARC Breakfast 8:00	1

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>



QRT John Brodie VA7XB

What To Expect At SARC's 2013 Field Day

2013 Field Day will be on the weekend of June 22/23 at Grandview Heights School grounds located at the northwest corner of 20th Avenue and 176th Street (aka Pacific Highway or Hwy 15). The superior attributes of this site have been adequately described in previous write-ups.

Surrey Amateur Radio Club (SARC) and Surrey Emergency Program Amateur Radio (SEPAR) have combined resources for this year's event and the planning team has been working diligently toward the objective of making our team #1 in Canada for Class 3A (3 HF stations, portable power).

Setup begins at 1100 hr Friday, June 21st, at which time, towers and beam antennas will be hauled to the site and raised, wire antennas erected, and operating and other tents put up. Volunteers are needed to assist with these duties, under supervision of the organizers. The Salvation Army mobile kitchen will also arrive on Friday, as will be BC Ambulance Service command vehicle.

Friday volunteers are requested to bring their own food for the day, except that pizza and drinks will be brought in at supper time for the volunteers still on-site. Water will be available from the mobile kitchen. A few volunteers are needed to set up motor homes or trailers and remain overnight on Friday for security purposes. Ample parking is available for participants. All are welcome to remain overnight on Saturday, but many choose to return home to sleep. Family members are encouraged to visit on Saturday afternoon.

On Saturday morning, radios will be set up and connected to antennas for testing prior to the official Field Day start at 1100 hr. All power for radios and cooking will be provided by gasoline-powered generators. The contest will continue non-stop for 24 hours until its conclusion at 1100 hr on Sunday morning. Twelve members will each operate a 6-hour shift, using a combination of SSB, RTTY and CW on the 80/40/20/15 and 10 metre amateur bands. These operators have already been hand-picked from a select list comprised of experienced SARC/SEPAR contesters and those members who have demonstrated through SARC's operator training program coaching and practice that they have the necessary skills in their respective modes to maximize the number of contacts.

A number of additional activities is planned for Saturday afternoon, many of which earn bonus points. A public information table will be the welcome location and focus for visitors to the site, of which we expect many. A brochure describing what Field Day is all about, plus other information concerning SARC and SEPAR will be available at the public information table. We also expect a few dignitaries, including municipal politicians and civic officials, to stop by. Visitors and new or "rusty" amateur radio operators will be encouraged to try operating a radio at the "Get-on-the-Air" Station, hosted by an experienced member. In addition, we will have an educational activity for the younger visitors that introduce them in a fun, non-threatening way to amateur radio. In addition, we plan to attempt a contact via amateur satellite and thereby demonstrate one more facet of the hobby. Other bonus points will be earned by copying an ARRL official message, passing NTS-style traffic messages, and demonstrating the use of solar power.

Three meals will be provided to participants - lunch and supper on Saturday, and breakfast on Sunday. The cost will be \$25 for all three meals, or \$10 individually. Past years' experience has shown the need to collect this money in advance in order to plan food purchases accurately so that we do not have large amounts of food left over (or run short). Surplus food is apt to cause us to run a deficit, which we hope to avoid. Accordingly, pre-payment for meals will be requested at June SARC and SEPAR meetings.

Persons involved in erecting or taking down towers should come with their own safety equipment including hardhat, high-visibility vest and gloves. Note: you will be barred from any hazardous work by our Safety Officer should you come without the necessary gear. If the weather is wet, raincoats and boots are advisable. Cool weather is always a possibility in June, so dress appropriately. You are welcome to bring your dog, but you must keep a close eye on your pet and clean up after him. Take-down of all equipment will commence at 1100 hr on Sunday, for which volunteers are also needed. Lunch after the take-down will consist of leftovers from the previous day's meals.

We hope you'll join us.